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GERMAN CAPITALISM AND THE POSITION OF AUTOMOBILE INDUSTRY BETWEEN THE TWO WORLD WARS (2)

By Yuji NISHIMUTA*

III "Socio-structural" Factors Surrounding Crisis of Automobile Industry in Germany

1. Constraints to Growth of the Demand

Table 9 shows population per an automobile for U.S.A., U.K., France and Germany in 1925, 1928 and 1932 respectively. This allows us to gain a broad idea of the standard of "motorization" in these countries at that time. Again, the United States maintain an overwhelming superiority, but what is significant is the fact that Germany's level was much lower even in comparison with U.K. and France. The inferiority remains basically unchanged in the period of rapid growth of output under the industrial rationalization movement (from 1928 to 1932). It is not unreasonable, under these circumstances, to conclude that automobile market in Germany had a remarkable growth potential, and in fact, that was the expectation of owners of automobile companies. It was not so in reality, because of a number of constraints, of which the followings seem to be important.

First, the National Railways (Reichsbahn), with its highly developed railway network, exerted monopolistic power in transportation of cargo and passenger in the country, and the Reich government strongly supported it by pursuing railway-centered transportation policy. This is partly due to the strategic importance of German railway system throughout the Second Empire extending over Prusso-Austrian

Tab. 9 Population per an automobil in Major Countries

year	U.S.A.	U.K.	France	Germany
1925	6.8	50	74	244
1928	5.2	38	44	134
1932	4.8	30	25	100

Wolfgang B. von Lengercke, *Kraftfahrzeug und Staat*, 1941, Heidelberg-Berlin-Magdeburg, S. 76, 77.

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War, Prusso-French War and the First World War.¹⁾ Because of this unchallenged position, Reichsbahn was able to have several laws introduced in order to restrict automobile traffic to its own advantage. This trend became even more pronounced after 1924 when the authority faced significant growth of automobile traffic, and the peak was reached with the introduction of Verordnung (administrative order) of October 6, 1931 which provided for (1) strict permission, (2) control on fares and (3) mandatory insurance policy concerning automobile transportation.²⁾

Second, as the consequence of strong concentration of transportation-oriented public investment to railways, development of road allowing automobile traffic was inadequate. According to a survey on road in Germany of 1933,³⁾ "while a road should have the minimum width of 5.5 m in order to satisfy ordinary needs of motorized traffic", only 30% of the "Staate-und Provinzial Strassen" (national and district road) considered as the first class road in Germany, had the width of 5.5 m or more. As to the lower class road called "Kreis-und Bezirksstrassen", 66.5% was narrower than 4.5 m. The survey concluded that 67% of German roads were "not suited" for modern automobile traffic because of their lack of width and adequate

Tab. 10 a

Automobil Tax	12.60 RM per 100 cc 315.00 RM a year per 2,500 cc
Gasolin Tariff	16.23 pf. per a Lit.
domestic Tax on fuel	4.66 pf. per a Lit.
Total fuel Tax	20.89 pf. per a Lit. if 15 l/100 km, 2,000 km a year, 627.00 RM a year

∴ Annual Tax per Automobil 942.00 RM

b Annual Tax per Automobil in Major Countries

Germany	942 RM	U.K.	589 RM
France	740 RM	U.S.A.	134 RM

W. Jacobi, *a.a.O.*, S. 20.

- 1) For the strategic importance of railways in Germany during the First World War, see A.J.P. Taylor, "The First World War—an Illustrated History, Harmondsworth, 1966, translated by Minoru Kurata, "Daiichiji Sekai Taisen", p. 18.
- 2) O. Ziegler, *Shiene oder Straße? Das moderne Verkehrsproblem in Deutschland, den wichtigsten europäischen Staaten und USA*, Prag 1934, S. 65. 91.
- 3) W. Jacobi, *Die Maßnahmen zur Förderung des Automobilabsatzes in Deutschland*, 1541, S. 32.

pavement.⁴⁾

Third, and as a more direct constraint, the taxation and tariff system of Reich government imposed heavy burden on ownership and use of automobile. The government held a traditional view that automobiles were a luxury item, and heavily taxed both automobiles and imported gasoline.⁵⁾ Table 10 shows how this is translated into annual tax burden per an automobile. We can easily see that compared with tax burdens in other countries (U.S.A., France and U.K.), tax burden was exceptionally high in Germany.

Fourth, as it can be seen from the duty on gasoline already mentioned, Germany was at a relative disadvantage concerning oil supply. The United States have had rich petroleum resources at home, while U.K. and France had colonies producing abundant petroleum. Germany, on the contrary, was rich in coal mines but it had virtually no oil coming from domestic sources. This handicap led Germany to develop technologies such as conversion of coal into fuel oil, synthesized petroleum, diesel engine and so forth. Nevertheless, disadvantage of having to depend entirely on imported oil was obvious, especially as consumption grew rapidly due to growth of automobile traffic, all the more because the country had to pay huge amount of war reparations under the Versailles Treaty and every effort was necessary to curb the import.

Fifth, we must not overlook the fact that the traditional attitude to regard automobile as luxury was still very much alive among the people.⁶⁾

These factors acted individually as well as collectively as socio-structural obstacles for growth of automobile demand in Germany at the time.

If we go a step farther, yet, we realize that behind the Reich government's transportation policy centered on railways and various administrative measures as well as intentions corresponding to it, there was a fundamental characteristic peculiar to German capitalism since the Second Empire and deeply influencing the country's industrial development. Specifically, coal and steel production was at the center of German industry, to which electrical machinery and chemical sectors were lined up as auxiliary elements, and all of them were in turn integrated by railway transporta-

4) In 1930, German Automobile Club (Allgemeinen Deutschen Automobil-Club) sent a petition to the government, requesting it to improve roads for convenience of motor traffic. W. Jacobi, *a.a.O.*, S. 32.

5) This was partly due to the fact that automobile owners were a welcome target of the Weimar government who aimed redistribution of wealth by way of progressive taxation and other means.

6) W. Jacobi, *a.a.O.*, S. 17. An interesting argument arose in 1932 between Professor Sombart, an economist, and professor Oswald, a chemical expert. While Sombart argued that automobiles should be banned in order to protect environment and reduce noise level, [Oswald] strongly argued in favor of automobile for their technical and practical value. Jacobi, *a.a.O.*, S. 14.

tion into a complex system.⁷⁾

This traditional structure of development of German capitalism was reflected in the Reich government's industrial policy. After the end of the First World War, various consequences of the Versailles Treaty and Weimar structure added further element of socio-structural constraints over growth of demand for automobiles in Germany. We may think that these factors prevented so-called "mass production system" or "the American model", introduced under the industrial rationalization movement, from achieving full development. For from the objective, huge amount of capital invested in fixed assets turned into a negative burden on the part of automobile industry who had no alternative than to face the serious crisis.⁸⁾

These circumstances were obviously beyond the control of financial or industrial capacity proper to German automobile manufacturers. F. Ledermann, an eminent contemporary scholar of management science, aptly remarked that it was a "miscalculation in rationalization of German automobile industry" (*Fehlrationalisierung-der irrweg der deutschen Automobilindustrie*).

2. "Structural Contradiction" of German Capitalism during the period of "Industrial Rationalization Movement"

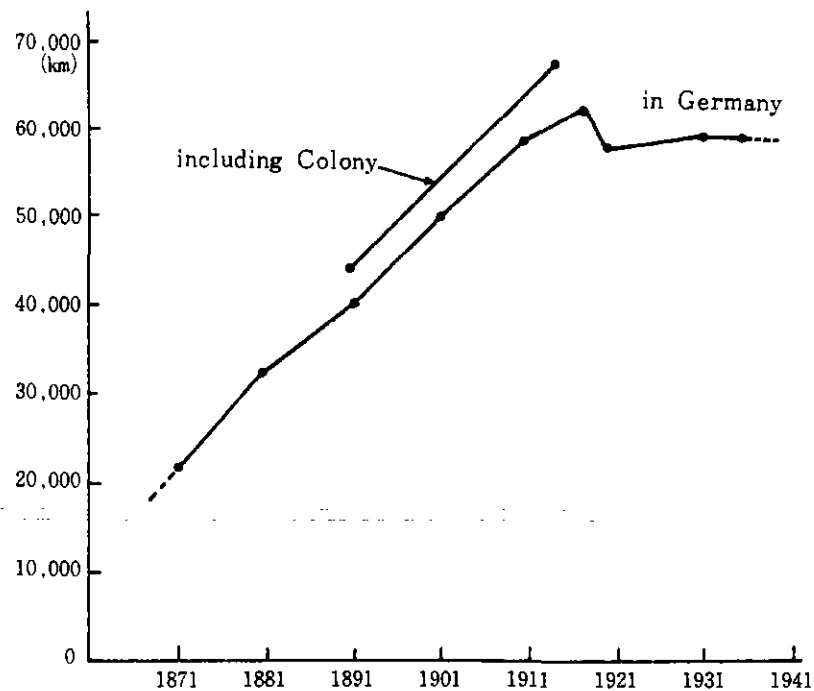
Yet, if we take a short look at the trends of other German industrial sectors as a part of the overall framework in the same period, there emerge certain factors not included in Ledermann's scope of vision.

Various researches made in Japan concerning German capitalism between the two World Wars have shown that during the "industrial rationalization movement" period, other industrial sectors such as steel⁹⁾ and chemical¹⁰⁾ experienced problems due to low plant utilization and deterioration of income, because new capital investment and diversification under the rationalization movement were not necessarily matched by growth of demand for products. For the purpose of the present study,

7) Lenin, "Shihonshugino Saikono Dankai toshiteno Teikokushugi" (*Imperialism as the Highest Stage of Capitalism*), Iwanami Bunko, Translated by Motosuke Ueda, p. 17.

8) Mukai, Shikamatsu, "Sangyono Gorika" (Industrial Rationalization, 1930) is one of the reports on the rationalization movement in Germany, and the author cites automobile industry as an example of "technical success turned into a management failure". He wrote: "These German automobile companies built up fine conveyor systems and then removed them completely, only to adopt simple flow lines of work. This is because the conveyors are very adapted in a factory turning out several hundred cars per day, but not if the volume is 20 to 30 cars at most in one day. Thus, the work rationalization attempted by enthusiastic engineers appears to have failed in Germany, at least for the moment". p. 179.

9) For German steel industry of this period, see Kudo, A., "Tekko" (*ibid.*), and specially on deterioration of utilization rate (p. 93) and changes in shares of steel products to total output (p. 108). For instance, railroad-use materials, and wagons decreased from 2.7 million tons in 1913 (16.8% of the total) to 1.4 million tons in 1928 (11.4%). The total production also decreased from 16 million tons to 12.88 million tons during the same period of time (Table 7).



Statistisches Jahrbuch für das Deutsche Reich, 1880-1938

Fig. 5 Development of Railway Network in Germany (including Colony)

we may not need to take a detailed look on this aspect, but these findings are sufficient to suggest us that the development of various industrial sectors under the traditional growth structure of German capitalism had struck a certain limit at that time. As Figure 5 shows, German railway network continued a constant growth ever since the advent of the Second Empire until the end of the first world war, and at the period of rationalization movement the opposite trend starts to develop. In the author's opinion, this change is significant.

In any event, industrial policies followed by the Reich government as an extension of the growth structure of German capitalism since the advent of the Second Empire acted on one part as the restraint to the growth of automobile industry, while on the other hand growth of other industrial sectors came to a stagnance under the same policies. Moreover, growth of production capacity realized under the industrial rationalization movement actually had an aggravating effect on the "structural

10) For chemical industry, see Kodo, *ibid.*, "IG Farben no Seiritsuto Tenkai". During this epoch, I.G. Farben concentrated investment to development of new business. Examples are Hoechst (acetylene and synthetic acetic acid-solvent), Beyer (synthetic rubber and point) and Reuna (liquidation of coal for production of artificial petroleum). Nevertheless, in 1920's, "there was practically no market for these products" (p. 110). Clearly, IG Farben was trying to become a major factor in automobile industry, but the strategy was frustrated due to the crisis of automobile industry as referred to already.

contradiction" rather than to resolve it. The whole problem for German capitalism during the period of "industrial rationalization movement" was there. It is well known that rate of unemployment, although quite different in character from that in existence prior to the First World War, persisted during the rationalization period¹¹⁾ — the ratio was normally 2~3% from 1900 to 1913 except for depression cycles in which it rose to 7 to 8%, but the ratio was consistently above 10% from 1924 to 1928. This means that German capitalism at that time was generally in a recession, in spite of a short period of "Inventions-konjonktur" (investment boom).¹²⁾

The worldwide panic that started at New York Stock Exchange on October 24, 1929 was a severe blow to the capitalism in Germany, already struggling hard with the structural difficulty. Unemployment hit a critical record level of six million people in 1932, while the failure of Danato Bank and merger of Deutsche Bank and Diskonto Gessellschaft triggered a drastic reorganization of financial department. In such an environment, the major German banks, or the German financial capital, being the unchallenged leader of total industrial structure including all traditionally important sectors like coal & steel, electrical machinery and chemicals as well as automobile industry, were hard pressed to achieve some fundamental restructuring of the industrial base. The coming into power of Nazi happened at the very moment of such challenge, on January 30, 1933.

IV Development of the "Motorisierung" Policy Under the Nazi Government

1. "Motorisierung Politik"

Twelve days after seizing the power, at the Berlin Automobile Show (Berliner Automobilausstellung) which opened on February 11, 1933, Hitler made the following statement: "The astonishing developmant of railroad in 19th Century realized a revolution of traffic, but its complexity was such that individuals were deprived of freedom of transportation. It is now that we need to build automobiles as the transportation means of the new age, readily available for satisfaction of plans and intentions of individual persons, as well as roads to be used by automobiles, so that we are able to secure freedom of traffic".¹³⁾

Hilter thus declared implementation of comprehensive "motorisierung"¹⁴⁾ plan by the Nazi government, and thereafter, various policies for promotion of automobile industry were introduced one after another. We have already seen the dismal conditions of German automobile industry and the country's capitalism immediately pre-

11) Tsukamoto, *ibid.*, "Nazis Keizai", p. 94. and Kato, *ibid.*, "Weimar Taiseino Keizai Kozo", pp. 210-211.

12) The basic problem, of course, is how to understand the issue.

13) Reichsverband der Automobilindustrie, 4 Reden zur Eröffnung der International Automobilausstellung, Berlin 1933. Iwasaki, Matsuyoshi, "Jidosha Kogyono Kakuritsu" (The Establishment of Automobile Industry), 1941, p. 236.

14) German equivalent of "motorization", used here for the sake of its special implications.

ceding Nazi's seizure of power, and given the fact, it is not surprising at all that the new Regime opted for the policies already mentioned. We shall see later how these policies were implemented and what results were obtained. In the meantime, it is necessary to turn our attention to another significant aspect of Hitler's ideas concerning automobiles. This consists of the so-called "Heeresmotorisierung" (military motorization) plan which started to take form after the capitulation within the German Defence Forces.¹⁵⁾ A pamphlet titled "Heeresmotorisierung" (Berlin, 1931) authored by W. Nehling, an officer of the German Army, contains those characteristic statements:

"It is too costly to stock a vast number of automobiles for military purpose. Moreover, by the time a war breaks out actually, these automobile may have already obsolescent and incapable to show performances comparable to those of enemy vehicles. On top of this, the military will need a *very large number of drivers* (the author's underline), and it will be impossible to have access to sufficient number of drivers unless automobiles are widely used already in peace time..... Therefore, all responsible people must try to do their best not only to maintain German automobile industry at a high level of standard, but also to promote the industry so that it could achieve the highest possible degree of prosperity. Our country's future depends on our success in this regard..... Such a strong support to our automobile industry is necessary because Heeresmotorisierung must be able to take full advantage from the automobile industry and "Wirtschaftsmotorisierung", that is to say, using major part of automobiles and production capacity already in existence in the economic life for the military purpose when necessary.¹⁶⁾"

This concept was clearly the other side of the "Motorisierung" coin. We are now going to see how this strategy was implemented in Germany.

First, it took the form of abolishing of automobile tax. The law concerning amendment to the taxation on automobile dated April 10, 1933 stipulates in Article 2a as follows: "Those passenger vehicles, passenger motorcycles and all types of omnibus driven by internal combustion engines for which permission has been granted on and after March 31, 1933 are *exempt from all taxes*"¹⁷⁾ (the author's underline).

Following this, the taxes were exempted for all second-hand automobiles under the law of May 31, 1933. The laws had an effect of reducing maintenance cost of automobiles immediately by ten to fifteen percent.¹⁸⁾

Second, it took massive efforts to improve as well as expand automobile road system. The "Generalinspektors für des deutsche Strassenwesen¹⁹⁾" (German Road

15) P. Kirchberg, *Entwicklungstendenzen der deutschen Kraftfahrzeugindustrie 1929-1939, gezeigt am Beispiel der Auto Union Ag, Chemnitz* Diss. Dresden, 1964, S. 90.

16) W. Nehring, *Heeresmotorisierung*, Berlin 1931, S. 35 Zitiert bei P. Kirchberg.

17) P. Kirchberg, *a.a. O.S.* 93 ff.

18) W. Jacobi, *a.a. O.*, S. 23.

18) R.J. Overy, *op. cit.*, p. 474.

19) W. Jacobi, *a.a. O.*, s. 32.

Supervisory Agency) was created in 1933 in order to consolidate all road-related administrative actions, heretofore decided among various agencies, into a single administrative body, in order to allow it to undertake large scale upgrading and construction of automobile-use road network. The most important part of these efforts is the plan announced on May, 1, 1933 for construction of a total 7,000 km of "Autobahn". It was implemented immediately under the "Law concerning Construction of Reichsautobahn"²⁰⁾ dated June 27:

"Article 1. The Deutsche Reichsbahn (State Railways) Company is hereby authorized to undertake construction and maintenance of automobile routes in addition to its existing lines of business. A company shall be founded for this purpose, to be called Deutsche Reichsautobahn Company.

Article 9. Deutsche Reichsautobahn Company shall be empowered to make requisitions of land for public use in conjunction with conduct of its business.

Article 12. The Reichsgovernment shall be authorized to issue administrative orders necessary for application of the Law.

Under the law, construction of Frankfurt A/M — Mannheim Route was started already on September 23 of the same year, and works progressed at a fast pitch elsewhere. In May, 1935, the first section was completed between Frankfurt-am-Main and Darmstadt, and by December, 1938, the Autobahn covered a total distance of 3,000 km.²¹⁾

Tab. 11 Participant of Berlin Motor Show

year	Visitor (Ten thousand)	area (m ²)	Number of firms
1931	29.5	16.0	300
1932	—	—	—
1933	35.0	16.0	350
1934	41.0	19.0	400
1935	59.0	45.0	400
1936	64.0	45.0	400
1937	73.0	45.0	450
1938	77.0	50.0	500
1939	82.5	35.0	500

H.C.G.v. Sehherr-Thoss, *a.a.O.*, S. 640, 641.

W.Jacobi, *a.a.O.*, S. 37.

20) F. Volk, Der Aufbau der Gesselschaft "Reichsautobahnen", Diss. Leipzig, 1935, s. 5, Iwasaki, *ibid.*, p. 242.

21) Iwasaki, *ibid.*, p. 244.

Third, Reichsbahn newly created a *trucking transportation division* and placed order for a large number of trucks.²²⁾ Historically, Reichsbahn had been against promotion of any automobile traffic, but the establishment of Reichsautobahn Company as a *subsidiary* now harmonized the vested interest with the need to promote automobile transportation

Fourth, the fact that the Berlin Motor Show was utilized as an opportunity for big scale promotional activity seems to be worthy of our attention. Ever since its start in 1897, the show had been sponsored by the Federation of German Automobile Industry (R.d.A.), but the Nazi government now became the real promotor and sponsor. Table 11 shows number of visitors to the Berlin Motor Show from 1931 to 1939. It will be seen that number of visitors snowballed from 350,000 in 1933 to 410,000, 590,000, 640,000, 730,000, 770,000 and to 830,000 year after year. We might say that U.S. style "mass marketing", a condition essential for development of mass production, was now being undertaken not by the manufacturers but by the State itself.²³⁾

It was precisely at this juncture that Hitler made these public addresses as already mentioned. They were a unique fusion of promotion of automobile and propaganda for Nazi ideology. The U.S. style turnaround of concept of automobile triggered by Henry Ford repeated itself in Germany at Hitler's initiative. This public address quoted in the beginning of this section is a typical example showing key characteristics of so-called "ideology of Germanic democracy"²⁴⁾ in which "the aspirations for a strong individual" as a necessary outcome of bourgeois individualism is transformed in a voluntary obeisance to the strong. The ultimate objective of Nazism was to take advantage of this shift of consciousness of German people at large in order to ensure their obeisance to Hitler, their voluntary participation to the movement for reconstruction of German Empire, as the obedient "drivers" of the

22) O. Ziegler, *a.a.O.*, S. 100.

23) Strategies used by German automobile industry prior to this event (February, 1933) for promotion of "mass marketing" is not well known enough. This is one of future tasks for the author.

24) "Decision taken by the majority votes, the principle of parliamentarism) is denial of the rights of individual by attaching priority to interest of the mass from time to time, and thus, it violates the natural and fundamental ideals of aristocratic principles". "The Judaic doctrine transformed in Marxism refuses the natural aristocratic principles. Instead of the external prerogatives of power and strength, it respects the mass and its vain weight. Marxism thus denies the value of individuals as a human being, objects to the significance of nations and races, and deprives humanity of the bases of its existence and its culture". "What is necessary is the true Germanic democracy. There is no such thing as the supremacy of majority over individual issues. Only if one decides to devote his capability and his life for the sake of his own decision, the the decision is complete as the real will". A. Hitler, "Mein Kampf", 1925, translated by Hirano and Masazumi, Kadokawa Bunko, "Waga Toso" (Mein Kampf), Vol. 1, p. 126 et seq.

vehicle.

The well-known "Volkswagen-program" was the culmination of this policy. At the Berlin Motor Show of 1934, Hitler spoke to the public as follows:

"As long as automobiles are the exclusive prerogative of the privileged class as a means of transportation, they create a bitter feeling among people who are more brave, more industrious and more capable, because they are not allowed the access to use of automobiles. Today, automobiles should no longer be for exclusive use by the privileged class, but they must become the source of great enjoyment and happiness of people on Sundays and on holidays."²⁵⁾

He therefore ordered Ferdinand Porsche, an "engineering genius", to design Volkswagen which should be "economical, easy to drive, capable of showing good performance even on inferior road, and having superior fuel efficiency". Following a number of complicated processes,²⁶⁾ Adam Opel was eliminated in the meantime. In 1937, VW Preparatory Company was organized under the control of Daimler-Benz and Deutsche Bank²⁷⁾ as the principal undertaking of German Labor Front (DAF). Construction of the main plant started at Fahrersleben near Wolfsburg in the middle part of Germany. The Volkswagen design was completed in the next year, and it took the name of KDF Wagen in commemoration of Kraft durch Freude, the Nazi recreational organization.

These policies were obviously part of the systematic strategy of "Motorisierung". Insofar as transportation was concerned, this meant a complete turnaround²⁸⁾ of the conventional policy of German Reich. It resulted in a complete dismantling of "social and structural" constraints over German automobile industry, and above all, over the demand for automobiles.²⁹⁾ As such, it exerted a drastic influence on the automobile market and production in Germany. From now on, we are going to see what was the direct effects of the new policy.

2. Direct Effect and Significance of the Policy

Coming back once again to Figure 1, we notice that production of automobile in Germany grew in leaps and bounds from 100,000 in 1933 to 170,000 in the following year, far above the level of production in 1928, and then to 240,000 in 1935, 300,000 in 1936, and to 340,000 in 1938. Volume of production thus grew three times within a relatively short span of six years. Now, we know how such a surprising growth was made possible. Simply stated, the advanced production system (patterned

25) Iwasaki, *ibid.*, p. 246.

26) Furukawa, *ibid.*, "Seiritsu Katei", and H. Handke, *Zur Rolle der Volkswagenpläne bei der Faschistischen Kriegsvorbereitung*, *Jahrbuch für Wirtschaftsgeschichte*, 1962-1.

27) H. Handke, *a.a.O.*, S. 45, 46, 68.

28) To review overall policies adopted by the Nazi government in order to evaluate importance of the "motorisierung" will be a meaningful research on its own right.

29) Only exception was the duty on imported gasoline. This was to have a significant meaning later on.

after the U.S. model) introduced during the industrial rationalization movement was combined with the "Motorisierung" policy adopted by the Nazi government, with the result that the automobile industry was cut loose from the previous constraints in order to start a full-fledged development. Mass production system in the automobile industry was thus established for the first time in Germany.³⁰⁾

As the system of streamlined flow of work became operational, the "totalitarian right of command on labor" on the part of the capital started to function effectively over a large number of workers being absorbed by German automobile industry. The "top-staff-line" type of system of command could be understood as the infrastructure needed to realize so-called "Führerprinzip" (leadership principle) of Nazism in the domain of production process.

This capital's "despotic right of command on the labor" was further strengthened and became complete as the result of dissolution by force of existing labor unions soon after the "government-sponsored" may day in 1933, their reintegration by DAF, introduction of unilateral determination of working conditions by the Labor Administrator (Treuhänder der Arbeit), enactment of the "Law concerning National Labor Orders" of January 10, 1934, use of "labor identity card" for authoritarian placement of workers and other means.

By the second half of 1930's, German automobile industry grew in scale comparable to coal steel production, electrical machinery and chemicals and became a major sector of industry (ref. Table 1 a and b). Of even more importance, however, is the fact that because of the spectacular growth of automobile industry, these other traditional sectors quickly expanded their automobile-related business (e.g. thin plate in steel industry, synthesized rubber and petroleum, paints, solvents and the like in chemical industry), to such an extent that the old industrial structure built along the coal-steel-railway axis was now reorganized into one which might be called "industrial mass-production system built around the automobile industry."³¹⁾ It was through this process that the capitalism in Germany succeeded in creating enough new jobs for unemployed and in putting an end to the serious recession.³²⁾

3. Crisis of Balance of Payment and the Second 4-Year Plan

Behind the rapid recovery, the German capitalism was faced with a serious problem. Recovery of the economy caused a sharp increase in import of raw materials, especially such like petroleum and rubber because of the shift in the country's industrial structure as discussed earlier. Rumania and U.S.S.R. were particularly important

30) Table 13 shows various management performance indexes of German automobile companies during the period of 1932 to 1935.

31) More detailed analysis of the "structural transformation" will be an object of a separate study to be undertaken in a separate paper.

32) Production index of German industry (1929=100) was 60.7 in 1933, 94.0 in 1935, and 117.2 in 1937. Rate of unemployment was 26.3% in 1933, 11.6% in 1935 and 5.1% in 1937 Tsukamoto, *ibid.*, p. 197

Tab. 12 German Oil import (1934-1938)

(Millionen RM)

year	Fuel and lubricating Oil	crud oil and tar	etc	Total
1934	128.4	15.4	6.3	150.0
1936	169.2	24.6	1.8	195.6
1938	224.8	43.4	1.4	269.6

W. Croll, *Wirtschaft im Europäischen Raum*, 1940.

German Oil import from Rumania

year	RM
1929	26.2
1936	53.8

H. Uhrmacher, *Großraumwirtschaft*, 1938.

as the source of petroleum import. (Table 12)

This resulted in a serious crisis in Germany's international balance of payments, which triggered heated arguments concerning priorities of economic policies and speed at which such policies were implemented, while on the other hand it led to a strong demand for so-called *Grossraumwirtschaft* (wide economic zone).³³⁾

Hitler's "Second 4-Year Plan"³⁴⁾ was introduced at this very juncture. It consisted, in the first place, to subsidize heavily large scale production of synthetic rubber and petroleum to replace import, for which total mobilization of German chemical industry was necessary. Secondly, it aimed to build up a powerful military strength on the basis of the country's automobile industry (and especially on the basis of production of internal combustion engines) essential to develop large scale "armored corps", "motorized infantry units" and the air force. This amounted to no less than full realization of the "Heeresmotorisierung" (military motorization).³⁵⁾

33) W. Croll, *Wirtschaft im Europäischen Raum*, 1940. Japanese Translation, "Yoroppa Chiikini Okeru Keizai", H. Uhrmacher, *Grossraumwirtschaft*, 1938, Japanese translation, "Koiki Keizai", by Sekai Keizai Chosakai, ed., the "Nazis Koiki Keizairon", 1943.

34) Ono, *ibid.*, "Yonkanen Keikakuto Keizai Seisakuno Tenkan — Nazi Regime Kenkyu Note" (Economic Policy under the 4-year Plan—Some notes on the Nazi Regime), p. 183 et seq., in particular p. 192.

35) The "Heeresmotorisierung" was commonly translated in Japanese as "Gun kikaika" (mechanization of armed forces). For direct relationship between the aircraft industry and automobile industry in Germany, see Tsuji, Takezo, "Doitsuno Kokukogyo" (Aircraft Industry in Germany) in 1943, pp. 102-103. With regard to specific types of aircraft and engine, the relationships were as follows: Messerschmitt fighter Me109 F2-Daimler-Benz DB601, Twine engine Fokkewulf fighter FW 187-Daimler-Benz DB601, Junkers Bomber Ju 87-A — Jumo 210, Dornier bomber Do 217 E — BMW 801.

Tab. 13 Major German Automobil firms (1932-1935)

	1932	1933	1934	1935
Opel				
Sales (Milli RM)	60	90	168—184	210—230
output	21,581	35,599	68,204	102,759
workers	6,600	13,000	18,000	18,300
Gross Income (Milli RM)	25.94	47.73	82.60	112.82
Net Income (%)	-0.84	5.01	13.40	19.76
dividend (%)	0	0	0	0
Daimler-Benz				
Sales	65	100	147	226
workers	8,700	14,000	22,600	26,600
Gross Income	31.22	49.34	82.24	111.10
Net Income	-4.95	2.47	4.13	3.22
Dividend (%)	0	0	0	5
Auto Union				
Sales	40	65	116	181
Workers	4,359	7,371	12,256	16,500
Gross Income	19.01	28.45	49.75	77.38
Net Income	-0.57	0.86	0.91	1.60
dividend (%)	0	0	4	6
Adler Werke				
Sales	30.75	47.75	64.20	83.30
Output	4,773	7,476	10,249	18,233
Gross Income	11.38	21.00	29.98	138.38
Net Income	-5.02	11.1	1.57	1.42
Dividend (%)	0	0	0	4

Frankfurter Zeitung 30.8.1936. H. Priester, *Das Deutsche Wirtschaftswunder*, 1936.

As an example of the government's direct intervention to automobile industry, "Generalbevollmächtigte für das Kraftfahrwesen" (Executive Chairman for Automobile Traffic) was appointed in 1938 at the instigation of Gahring with a view to enforce additional standardization (i.e., reduction of number of models) of automobile production. In consequence, number of models of passenger automobiles was reduced from 52 to 30 and that of trucks from 133 to 21. Construction work of mass production plant for manufacture of Volkswagen was accelerated in accordance with the policy.³⁶⁾

36) P. Kerchberg, a.a. O. S. 194, Typisierung in der deutschen Kraftfahrzeugindustrie und Generalbevollmächtigte für das Kraftfahrwesen, *Jahrbuch. für Wirtschaftsgeschichte*, 10-1969 II teil, S. 136.

In the meantime, attempts for creation of "wide economic zone" got momentum. Germany annexed Austria in 1938, and in March, 1939, Czechoslovakia became a German Protectorate, while a five-year treaty for economic cooperation was concluded with Rumania.³⁷⁾ In the same year of 1939, on September 1, the German Armored Units invaded Poland, marking the start of the Second World War.

Conclusion

Our preceding analysis of German automobile industry suggest us a conclusion which may be expressed in the following terms: the management crisis of German automobile industry and the "structural contradictions" in German capitalism which became apparent during the period of "industrial rationalization movement" under the Weimar Structure, followed by the advent of Nazism, gave rise to the "motorisierung" policies under the new regime. It had an effect of not only freeing German automobile industry from a number of existing constraints, but turned these constraints themselves into a leverage to realize a fundamental transformation of industrial structure of the German capitalism itself. The previous structure under the Second Empire, coal and steel production integrated by railway transportation, was reorganized into a huge modern complex in which steel production, chemical industry construction of high ways and petroleum were built around the automobile mass production system. The structural conversion was of such character that Germany had no alternative but to seek construction of the "wide economic zone" as a matter of essential necessity. At the same time, the restructurization was a process in which a vast number of unemployed workers were reintegrated into the industry by the State, and in which the State achieved accomplishment of a unique form of militarization of economy called "Heeresmotorisierung", Capitalistic despotic right of command within manufacturing plant was thus extended over the entire society.

Throughout the process, the three crises inherent in the German capitalism following the First World War — the right of command in production process, international competitive strength, and imperialistic independence — were resolved according to the principles of Nazism. The crucial role of German automobile industry and its characteristic based on the "American Model" which emerged from the process seems to show us an important insight into the essence of Nazism, in that the role played by a rapidly developing new industry in the evolution and development of Nazism is probably the very essence of Nazism.

37) W. Croll, *a.a.O.*, Japanese translation, p. 238. German-Rumanian Joint Petroleum Company was established on this basis.